



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

46363 7590 08/07/2009

WALL & TONG, LLP/
ALCATEL-LUCENT USA INC.
595 SHREWSBURY AVENUE
SHREWSBURY, NJ 07702

EXAMINER

JOO, JOSHUA

ART UNIT

PAPER NUMBER

2454

DATE MAILED: 08/07/2009

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/780,509

02/17/2004

Ronald van Haalen

R. VAN HAALEN

7865

TITLE OF INVENTION: METHOD AND APPARATUS FOR REBOOTING NETWORK BRIDGES

2-6-5-1-1 (

| APPLN. TYPE | SMALL ENTITY | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|----------------|--------------|---------------|---------------------|----------------------|------------------|------------|
| nonprovisional | NO | \$1510 | \$300 | \$0 | \$1810 | 11/09/2009 |

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

46363 7590 08/07/2009

WALL & TONG, LLP/
ALCATEL-LUCENT USA INC.
595 SHREWSBURY AVENUE
SHREWSBURY, NJ 07702

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

| |
|--------------------|
| (Depositor's name) |
| (Signature) |
| (Date) |

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/780,509 02/17/2004 Ronald van Haalen R. VAN HAALEN 7865

TITLE OF INVENTION: METHOD AND APPARATUS FOR REBOOTING NETWORK BRIDGES

2-6-5-1-1 (

| APPLN. TYPE | SMALL ENTITY | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|-------------|--------------|---------------|---------------------|----------------------|------------------|----------|
|-------------|--------------|---------------|---------------------|----------------------|------------------|----------|

nonprovisional NO \$1510 \$300 \$0 \$1810 11/09/2009

| EXAMINER | ART UNIT | CLASS-SUBCLASS |
|----------|----------|----------------|
|----------|----------|----------------|

JOO, JOSHUA 2454 709-221000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/780,509 | 02/17/2004 | Ronald van Haalen | R. VAN HAALEN | 7865 |
| 46363 | 7590 | 08/07/2009 | 2-6-5-1-1 (| |
| WALL & TONG, LLP/ ALCATEL-LUCENT USA INC. 595 SHREWSBURY AVENUE SHREWSBURY, NJ 07702 | | | | |
| EXAMINER | | | | |
| JOO, JOSHUA | | | | |
| ART UNIT | | | PAPER NUMBER | |
| 2454 | | | | |
| DATE MAILED: 08/07/2009 | | | | |

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 1166 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 1166 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

| | | | |
|-------------------------------|------------------------|---------------------|--|
| Notice of Allowability | Application No. | Applicant(s) | |
| | 10/780,509 | HAALen ET AL. | |
| | Examiner | Art Unit | |
| | JOSHUA JOO | 2454 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 4/30/09.
2. ☒ The allowed claim(s) is/are 1-8,10-23 and 25-27.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date ____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date ____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other ____. |

/Nathan J. Flynn/
Supervisory Patent Examiner, Art Unit 2454

Detailed Action

Drawings

Drawings filed on 02/17/2007 are accepted.

Examiner's Amendment

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given by Applicant Eamon J. Wall, Reg. No. 39,414, on July 23, 2009.

The application has been amended as follows:

Claims

1. (Currently Amended) A method for rebooting a first bridge in a network, the network containing a plurality of bridges and operating according to a first state, the method comprising:
 - a) sending notification to one or more second bridges in the network of the first bridge being scheduled for updating, thereby disturbing the first state;
 - b) updating ~~[[said]]~~ the first network-bridge after sending the notification;
 - c) restoring the first state of the network; and
 - d) sending notification to the one or more second bridges of the network that the updating of the first bridge has been completed;

wherein during the updating of the first bridge, a forwarding plane of the first bridge continues to operate, including maintaining states of ports, according to the first state of the network, and

Art Unit: 2454

wherein restoring the first state of the network further includes reestablishing an original spanning tree that existed in the network prior to the update of the first bridge.

2. (Currently Amended) The method of claim 1, wherein the step of sending notification to the one or more second bridges of the first bridge being scheduled for updating further comprises the first bridge sending a special bridge protocol data unit (BPDU) along a plurality of forwarding links connected to [[said]] the first bridge.

3. (Currently Amended) The method of claim 2, wherein the special BPDU is selected from [[the]] a group consisting of a normal spanning tree protocol (STP) configuration and a rapid spanning tree protocol configuration.

4. (Currently Amended) The method of claim 3, wherein the special BPDU message for the normal STP configuration is configBPDU.

5. (Currently Amended) The method of claim 3, wherein the rapid spanning tree protocol (RSTP) BPDU has a message age set to a value that does not occur during the normal RSTP operation.

6. (Currently Amended) The method of claim 5, wherein the value is $\text{MAX age} + 1$.

7. (Currently Amended) The method of claim 1, further comprising [[the]] a step of the one or more second bridges initiating a condition of not expecting additional messages from the first bridge subsequent to the notification of the first bridge being scheduled for updating.

Art Unit: 2454

8. (Currently Amended) The method of claim 1, further comprising ~~[[the]]~~ a step of disabling a control plane of the first bridge just prior to commencement of the updating.

9. (Cancelled)

10. (Currently Amended) The method of claim ~~[[9]]~~ 1, wherein the ~~restoration~~ reestablishing of the original spanning tree further comprises:

c1) retrieving a port state of each port of the first bridge.

11. (Currently Amended) The method of claim 10 wherein if ~~[[the]]~~ port states of the first bridge are retrieved via hardware, then the reestablishing of the original spanning tree ~~restoration~~ further comprises:

c2) waiting for a predetermined period of time to receive new network messages.

12. (Currently Amended) The method of claim 10, wherein if ~~[[the]]~~ port states of the first bridge are retrieved via software, then no waiting period for new network messages occurs.

13. (Currently Amended) The method of claim ~~[[9]]~~ 1, wherein the step of restoring the first state further comprises the first bridge blocking all of ~~[[its]]~~ ports of the first bridge and advertising ~~itself~~ the first bridge as a root if a BPDU is received on more than one forwarding port.

14. (Currently Amended) The method of claim 7, wherein the initiated condition includes the one or more second bridges sending self-generated configBPDU messages.

Art Unit: 2454

15. (Currently Amended) The method of claim 1, wherein the step of sending notification to ~~other~~ the one or more second bridges of the first bridge update completion further comprises the one or more second bridges receiving a normal BPDU from the first bridge.

16. (Currently Amended) A computer readable medium comprising memory containing a program which, when executed, performs an operation of rebooting a first bridge in a network, the network containing a plurality of bridges and operating according to a first state, the operation comprising:

- a) sending notification to one or more second bridges in the network of the first bridge being scheduled for updating, thereby disturbing the first state;
- b) updating ~~[[said]] the first network-bridge~~ after sending the notification;
- c) restoring the first state of the network updated; and
- d) sending notification to the one or more second bridges of the network that the updating of the first bridge has been completed;

wherein during the updating of the first bridge, a forwarding plane of the first bridge continues to operate, including maintaining states of ports, according to the first state of the network, and

wherein restoring the first state of the network further includes reestablishing an original spanning tree that existed in the network prior to the update of the first bridge.

17. (Currently Amended) The computer readable medium of claim 16, wherein the step of sending notification to the one or more second bridges of the first bridge being scheduled for updating further comprises the first bridge sending a special bridge protocol data unit (BPDU) along a plurality of forwarding links connected to ~~[[said]] the~~ first bridge.

Art Unit: 2454

18. (Currently Amended) The computer readable medium of claim 16, wherein the special BPDU is selected from ~~[[the]]~~ a group consisting of a normal spanning tree protocol (STP) configuration and a rapid spanning tree protocol configuration.

19. (Currently Amended) The computer readable medium of claim 18, wherein the special BPDU message for the normal STP configuration is configBPDU.

20. (Currently Amended) The computer readable medium of claim 18, wherein the rapid spanning tree protocol (RSTP) BPDU has a message age set to a value that does not occur during the normal RSTP operation.

21. (Currently Amended) The computer readable medium of claim 20, wherein the value is $MAX\ age + 1$.

22. (Currently Amended) The computer readable medium of claim 16, wherein the operation further comprises a ~~comprising the~~ step of the one or more second bridges initiating a condition of not expecting additional messages from the first bridge subsequent to the notification of the first bridge being scheduled for updating.

23. (Currently Amended) The computer readable medium of claim 16, wherein the operation further comprises a ~~comprising the~~ step of disabling a control plane of the first bridge just prior to commencement of the updating.

24. (Cancelled)

25. (Currently Amended) The computer readable medium of claim 16, wherein the step of sending notification to the one or more second ~~other~~ bridges of the first bridge update completion further comprises the one or more second bridges receiving a normal BPDU from the first bridge.

26. (Currently Amended) An apparatus for updating a first network bridge in a plurality of interconnected network bridges operating according to a first state comprising:

a forwarding plane configured ~~adapted~~ to provide physical control of ~~[[the]]~~ states of a plurality of ports in the first bridge; and

a control plane comprising a CPU configured ~~adapted~~ for issuing and executing instructions that control ~~[[the]]~~ physical actions ~~action~~ of the forwarding plane including:

a) sending notification to one or more second bridges in the network of the first bridge being scheduled for updating, thereby disturbing the first state;

b) updating ~~[[said]]~~ first ~~network~~ bridge after sending the notification;

c) restoring the first state of the network; and

d) sending notification to the one or more second bridges of the network that the updating of the first bridge has been completed;

wherein during the updating of the first bridge, a forwarding plane of the first bridge continues to operate, including maintaining states of ports, according to the first state of the network, and

wherein restoring the first state of the network further includes reestablishing an original spanning tree that existed in the network prior to the update of the first bridge.

27. (Currently Amended) The apparatus of claim 26, wherein the step of sending notification to the one or more second bridges of the first bridge being scheduled for updating further comprises the first

Art Unit: 2454

bridge sending a special bridge protocol data unit along a plurality of forwarding links connected to
[[said]] first bridge.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua Joo who telephone number is 571 272-3966. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Flynn can be reached on 571 272-1915.

/J. J./

Examiner, Art Unit 2454

/Nathan J. Flynn/

Supervisory Patent Examiner, Art Unit 2454